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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/509,233	09/24/2004	Bob Van Someren	NL 020279	3262

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EXAMINER

GUPTA, PARUL H

ART UNIT	PAPER NUMBER
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2656

DATE MAILED: 02/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/509,233	Applicant(s) VAN SOMEREN ET AL.	
	Examiner Parul Gupta	Art Unit 2656	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 September 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 1-20 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6 and 8-20 is/are rejected.
- 7) ☒ Claim(s) 1, 5, 7, 10, 12, 15 and 19 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date: _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1-20 are pending for examination as interpreted by the examiner. The IDS filed on 10/20/05 was considered.

Drawings

2. The drawings are objected to because figure 1 does not have labels for the block diagram. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

3. Applicant is reminded of the proper language and format for an abstract of the disclosure.

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The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

4. The disclosure is objected to because of the following informalities: lack of headings in the specification.

The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGREEMENT
- (e) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC (See 37 CFR 1.52(e)(5) and MPEP 608.05. Computer program listings (37 CFR 1.96(c)), "Sequence Listings" (37 CFR 1.821(c)), and tables having more than 50 pages of text are permitted to be submitted on compact discs.) or
REFERENCE TO A "MICROFICHE APPENDIX" (See MPEP § 608.05(a). "Microfiche Appendices" were accepted by the Office until March 1, 2001.)
- (f) BACKGROUND OF THE INVENTION.
 - (1) Field of the Invention.
 - (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (g) BRIEF SUMMARY OF THE INVENTION.

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- (h) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
- (i) DETAILED DESCRIPTION OF THE INVENTION.
- (j) CLAIM OR CLAIMS (commencing on a separate sheet).
- (k) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
- (l) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

Appropriate correction is required.

5. The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Objections

6. Claims 1, 10, 12, 15 and 19 are objected to because of the following informalities: claims 1, 10, 12, and 15 refer to the element number in the drawings for the optical recording medium. In addition, there is a typographical error in claim 1 where the "an" before "information" should be removed. There is also a typographical error in claim 19 where "comprises" should be changed to "comprising". Appropriate correction is required.

7. Claims 2, 3, 5, 6, 7, 8, 11, and 13 are objected to because of the following informalities: they should be written in method claim language format for better claim language. Examples include:

Claim 2 (rewritten) A method according to claim 1, wherein said modulating step is for obtaining a reduced reflection at said mark area.

Claim 8 (rewritten) A method according to claim 1 comprising: forming said incomplete mark areas by focused electron beam or a focused laser beam.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 1-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1, 15, and 18 recite the limitation "channel bit" in the last line of each claim. Claims 2-14, 16-17, and 19-20 are dependent on these rejected independent claims. There is insufficient antecedent basis for this limitation in the claims.

Claim 1 recites the limitation "method of writing" while the limitation "used for mastering" is recited in claim 12. It is unclear what specifically is being claimed.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 1-3, 8-10, 12-15, 17, 18, and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Nomoto, EP 0553573.

Regarding claim 1, Nomoto teaches in figure 6 a method of writing an information to an optical recording medium by forming mark areas ("pits" of element 1) corresponding to a predetermined state of said information on a recording surface of said optical recording medium, said method comprising the step of adapting said forming step to modulate the shape of said mark areas in a predetermined manner (page 2, lines 3-11) so as to obtain incomplete mark areas which do only partly cover the area of the medium ("information unit" of element U) associated with the channel bit to be written. Further explanation can be seen on page 4, lines 53-57.

Regarding claim 2, Nomoto teaches a method according to claim 1, wherein said shape of said mark areas is modulated to obtain a reduced reflection at said mark area. As the structure given by Nomoto is the same as the applicant, the result of a reduced reflection at the mark area must also inherently be the same.

Regarding claim 3, Nomoto uses figure 7c to teach a method according to claim 2, wherein said mark area (1) is a pit area (U), and a protruding portion (PP) is generated substantially in the center of said pit area (U).

Regarding claim 8, Nomoto teaches in lines 2-9 of page 11, a method according to claim 1, wherein said incomplete mark area is formed by a focussed electron beam or a focussed laser beam. Details of the laser beam and the operation are given in page 5, lines 31-43.

Regarding claim 9, Nomoto teaches a method according to claim 1, wherein said optical recording medium is a phase-change recording medium (page 5, lines 1-6) and

said incomplete mark area comprises a small amorphous mark (element 1 in figures 5b and 7).

Regarding claim 10, Nomoto teaches in lines 7-15 of page 5 and in figure 7b, a method according to claim 1, wherein said optical recording medium ("optical disc") is a two-dimensionally encoded medium (length and height).

Regarding claim 12, Nomoto teaches in lines 2-9 of page 11, a method according to claim 1, wherein said method is used for mastering a record carrier ("master disc").

Regarding claim 13, Nomoto teaches in lines 7-15 of page 5 and in figure 7b, a method according to claim 1, wherein said information is a multi-level coded information and wherein said shape of said incomplete pit area is modulated in accordance with the level of said multi-level coded information.

Regarding claim 14, Nomoto teaches in lines 7-15 of page 5 and in figure 7b, a method according to claim 1, further comprising the step of forming a cluster pattern of said incomplete marks on each channel bit area and controlling the pattern in accordance with the level of a multi-level coded information.

Regarding claim 15, Nomoto teaches in lines 2-9 of page 11, an apparatus for writing an information to an optical recording medium by forming mark areas ("pits") corresponding to a predetermined state of said information on a recording surface of said optical recording medium, said apparatus being adapted to modulate the shape of said mark areas in a predetermined manner so as to obtain incomplete mark areas which do only partly cover the area of the medium associated with the channel bit to be written.

Regarding claim 17, Nomoto teaches in lines 2-9 of page 11, an apparatus according to claim 15, wherein said apparatus is arranged to write a multi-level coded information by controlling the shape or number of said incomplete mark areas in accordance with the level of said multi-level coded information.

Regarding claim 18, Nomoto uses figures 5a and 5b to teach a record carrier ("optical disc") on which an information is written in the form of mark areas (1) corresponding to a predetermined state of said information, wherein the shape of said mark areas is modulated in a predetermined manner so as to obtain incomplete mark areas which do only partly cover the area of the medium associated with the channel bit to be written (T).

Regarding claim 20, Nomoto teaches in lines 7-15 of page 5 and in figure 7b, a record carrier ("optical disc") according to claim 18, wherein said information is a multi-level coded information, and wherein the shape or number of said incomplete mark areas defines a level of said multi-level coded information.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nomoto as applied to claims 1 above.

Regarding claim 4, Nomoto teaches a method according to claim 3, wherein the top region of said protruding portion is substantially in the center of said pit area.

Nomoto does not teach the same intended use of the top region of the protruding portion being adapted to form a land level portion.

The idea of using a pit area as a land level portion is well known in the art. Thus, as the structure given by Nomoto is the same as the applicant, it would be obvious to one of ordinary skill in the art at the time of the invention to use the given protruding portion as a land level portion in order to record information easily onto the recording medium.

11. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nomoto as applied to claims 1 and 10 above, and further in view of Chandler et al., EP 484132.

Regarding claim 11, Nomoto teaches the limitations of claim 10 and also a method according to claim 10, wherein said incomplete pit area is arranged in a grid of a two-dimensional coding scheme.

Nomoto does not teach that the grid must be hexagonal as opposed to rectangular.

Chandler et al. uses figure 3a to teach a hexagonal structure for the data cells used to encode information. Additional explanation is given in lines 18-26 of column 5.

It would have been obvious to one of ordinary skill in the art at the time of the invention to include the concept of a hexagonal grid as taught by Chandler et al. into the system of Nomoto. It is well known in the art that a hexagonal shape is beneficial as it can provide the highest packing fraction, enabling a high density of information storage.

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12. Claims 6, 16, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nomoto as applied to claims 1, 15, and 18 above, and further in view of Spruit et al., US Patent 5,553,038.

Regarding claim 6, Nomoto teaches the limitations of claim 1.

Nomoto does not teach the limitations of claim 6.

Spruit et al. uses figure 8 to teach a method according to claim 1, wherein said mark area is a pit area, and a hole (51) is generated substantially in the center of said pit area. Further explanation is given in column 10, lines 29-42.

It would have been obvious to one of ordinary skill in the art at the time of the invention to include the concept of a hole in the pit area of the record carrier as taught by Spruit et al. into the system of Nomoto. This structure increases the information density on the record carrier (column 3, lines 10-15; Spruit et al.).

Regarding claim 16, Nomoto teaches the limitations of claim 15.

Nomoto does not teach the limitations of claim 16.

Spruit et al. teaches an apparatus according to claim 15, wherein said mark area is a pit area and said apparatus is arranged to form a pillar portion or a hole within said pit area (column 4, lines 32-47).

It would have been obvious to one of ordinary skill in the art at the time of the invention to include the concept of a hole in the pit area of the record carrier as taught by Spruit et al. into the system of Nomoto. This structure increases the information density on the record carrier (column 3, lines 10-15; Spruit et al.).

Regarding claim 19, Nomoto teaches the limitations of claim 18.

Nomoto does not teach the limitations of claim 19.

Spruit et al. teaches a record carrier according to claim 18, wherein said incomplete mark area is a pit area comprises a pillar portion or a hole (element 51 of figure 8 and explained in column 10, lines 29-42).

It would have been obvious to one of ordinary skill in the art at the time of the invention to include the concept of a hole in the pit area of the record carrier as taught by Spruit et al. into the system of Nomoto. This structure increases the information density on the record carrier (column 3, lines 10-15; Spruit et al.).

Allowable Subject Matter

13. Claims 5, and 7 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The claims would be allowable over the prior art of record since the cited references taken individually or in combination fails to particularly disclose the clause of the claims that refers to "wherein the size ... is adjusted based on the size of a total pit area formed by adjacent pit areas". None of the given prior art teaches either the unique pillar shape of the pit or a pit that changes in shape without irradiation of a laser beam as described in the application.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Parul Gupta whose telephone number is 571-272-5260.

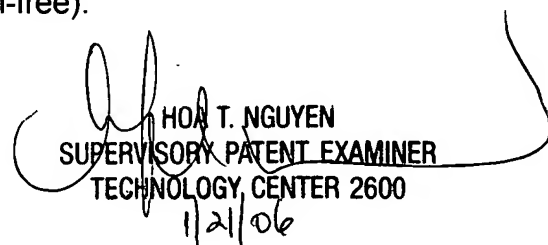
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The examiner can normally be reached on Monday through Thursday, from 8:30 AM to 7 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa Thi Nguyen can be reached on 571-272-7579. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

PHG


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